

REMARKS:

This paper is herewith filed in response to the Examiner's Office Action mailed on May 22, 2007 for the above-captioned U.S. Patent Application. This office action is a rejection of claims 1, 2, 4-9, and 11-15 of the application.

More specifically, the Examiner has rejected claims 1, 2, 4-9, and 11-15 under 35 USC 103(a) as unpatentable over Lin (US5831976) in view of Iseyama (US5787346). The Applicant respectfully traverses the rejection.

Claims 1, 5, 8, 11, 12, and 15 have been amended for clarification. Claims 16-22 have been added. Support for the new claims can be found at least on page 9, lines 5-14. No new matter is added.

Lin discloses "time sharing is accomplished by partitioning each radio channel into a plurality of "virtual" channels, each virtual channel having assigned thereto a plurality of the cells 302 selected such that the cells 302 can carry simultaneous transmissions on a single radio channel without causing excessive interference with one another," further in Lin, "a virtual channel is activated for the duration of one or more of the time slots, or frames, of the transmission protocol used in the communication system, and only one virtual channel is allowed to be active during any given time slot on any given radio channel," (col. 6, lines 4-14). Lin does not assign any slot as shared.

The Examiner states that "Lin fails to disclose predetermining, for each base station, a classification according to a probability of interference at the channel with other base stations of the plurality of base stations upon a request of at least one mobile station to initiate communication via a base station." As a result, the Examiner relied on Iseyama to address the failure of Lin to disclose this element.

As cited by the Examiner Iseyama relates to operations performed during a handover from one

mobile station to another including determining “whether the frequency currently being used by the mobile station is a shared assigned frequency and whether this frequency has been assigned to another mobile station in another time slot,” (col. 5, lines 51-54).

Further, Iseyama discloses:

“In such case the radio base station control unit 18 refers to the management table 18a and checks to determine **(a) whether the frequency F2 currently being used by the mobile station 11 is a shared assigned frequency and (b) whether this frequency has been assigned to another mobile station in another time slot,**” (emphasis added), (col. 7, lines 53-58); and

“The management table 18a is configured so that it is possible to identify, for each of the radio frequencies (F1~F3), **(a) the number of the radio base station using the radio frequency, (b) the number of the mobile station using the radio frequency in each time slot, and (c) whether this radio frequency is one that has been assigned for shared use by the radio base stations,**” (emphasis added), (col. 9, lines 47-53).

The Applicants contend that as cited Iseyama appears to only be concerned with whether there is a shared frequency and whether the shared frequency is idle. Further, Iseyama discloses “**As the result of handover control, the content of management table 6a changes** as shown in FIG. 33,” (emphasis added), (col. 3, lines 46-47).

Claim 1 recites:

“A method, comprising: determining, for each base station of a plurality of base stations capable of communicating with at least one mobile station via any of a group of slots in a communication system, a classification for each slot of the group of slots according to a probability of interference with other base stations of the plurality of base stations, comprising assigning as owned by one of said base stations and as avoided by other of said base stations a first slot in which said other base stations interfere with said one base station, assigning as owned by individual ones of said other base stations and as avoided by said one base station other slots in which said individual ones of said other base stations interfere with said one base station, and assigning as shared by said one base station and another of said other base stations a shared slot in which said another of said other base stations interferes with said one base station if used simultaneously with said one base station and which are not assigned as owned by any of the base stations; and

allocating on request a slot according to the determined classification and a desired quality class of transmission.”

The Examiner’s rejection of claim 1 appears not to have considered the “desired quality class of transmission” element. The reference cited clearly does not disclose or suggest “allocating on request a slot **according to the determined classification and a desired quality class of transmission,**” as in claim 1. Further, the Applicants can find nothing in all of Iseyama to disclose or suggest any slot allocation **according to a desired quality class of transmission.** The Applicants contend that this element of claim 1 is clearly non-obvious over Iseyama.

Iseyama discloses:

“a situation arises in **which the condition of radio-wave reception at the mobile station 11 changes** during communication in the radio zone 14 of radio base station 12, as a result of which it becomes necessary to hand over the mobile station 11 to the adjacent radio base station 13. When this happens, the mobile station 11 requests the base station control unit 18 to implement handover,” (col. 14, lines 12-18); and

“If it is found at step 255 that one of the radio channels in the other time slots #1, #2 of frequency F2 is currently being used by the other mobile station ("NO" at step 255), **then the base station control unit 18 determines** whether the communication quality of this other mobile station will be still be acceptable even if this mobile station is handed over (step 206),” (col.14, lines 53-59).

The Applicants note that here, Iseyama merely appears to **respond to a change** in the reception condition of a radio-wave signal. However, Iseyama fails to disclosed or suggest slot allocation according to a “desired quality class” as in claim 1. In Iseyama the base station control unit 18 is merely testing an existing communication quality level for a handover to the shared frequency already determined at step 254. Further, Iseyama discloses “if the reception level is satisfactory (e.g., if the reception level is higher than a set level), then the base station control unit 18 switches over the radio base station using the frequency F2,” (col. 14, lines 62-65). In addition, Iseyama discloses that “if the reception level of the signal being sent from the other mobile station is below the set level ("NO" at step 258), then handover to the same radio channel cannot

be carried out,” (col. 15, lines 10-12). Clearly, Iseyama is not seen to be allocating a slot on request according to **the determined classification and a desired quality class of transmission**. Rather, Iseyama is simply responding to a failed and strictly applied logic condition used during handover by further determining “whether the communication quality of this other mobile station **will be still be acceptable** even if this mobile station is handed over,” (emphasis added), (col. 14, lines 56-58). Moreover, the Applicants contend that the reception level determinations of “satisfactory” or “unsatisfactory” simply relate to a binary decision for determining whether to handover an **already identified** slot. Clearly, the decision for slot allocation made here in Iseyama does not disclose or suggest “a desired quality class of transmission,” as in claim 1.

In the present application slots are allocated according to determined classifications **and** according to **a desired quality class of transmission**. The Applicants respectfully contend that neither Lin nor Iseyama disclose or suggest any method of allocation according to a desired quality class of transmission, whether the allocation be of a channel, virtual channel, frequency, or slot. Clearly, the references cited can not be seen to disclose or suggest the claims.

The Application discloses:

“The term “quality class” is being used herein to connote what is generally known as QoS (quality of service) class. In this embodiment, communications requiring a high quality class start measuring in the slots assigned as owned by a BS, but communications not requiring a high quality class start measuring in the slots assigned as shared by a BS, thus permitting the owned slots (with their higher probability of low interference) to remain available for subsequent high quality class transmissions,” (page 9, lines 7-12). **See also** page 10, lines 4-5 and block 204 of Fig.2.

As stated above, Iseyama merely determines whether a frequency is shared and whether the frequency is idle. Iseyama does not address a quality class of transmission. Further, as disclosed above the binary test of whether an already identified slot meets a satisfactory threshold before allowing another device to handover can not be seen to suggest a “desired quality class of transmission,” as in the claims. It is clear that Iseyama is not concerned with allocating a slot or frequency according to a desired quality class of transmission.

S.N.: 09/658,731
Art Unit: 2617

Therefore, although the Applicants do not agree that the combination of Lin and Iseyama is feasible or possible, the Applicants contend that for at least the reasons stated such a combination would still not disclose or suggest claim 1. As stated above, this is at least because the management of channel or frequency assignment asserted by the references cited is not allocating a slot **“according to the determined classification and a desired quality class of transmission,”** as in claim 1.

In addition, for at least the reason that the independent claims 8 and 15 recite language similar to that of claim 1 as noted above, the references cited do not disclose or suggest these claims, and all the independent claims 1, 8 and 15 should be allowed.

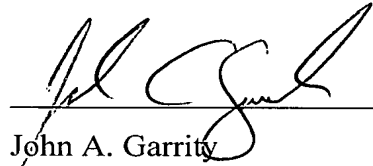
Furthermore, as the claims 2, 4-7, and 17-18; claims 9, 11-14, and 19-20; and 16, and 21-22 depend from claims 1, 8, and 15 respectively, the references cited do not suggest or disclose these claims, and all the claims 1-2, 4-9, and 11-22 should be allowed.

Based on the above explanations and arguments, it is clear that the references cited cannot be seen to disclose or suggest claims 1-2, 4-9, and 11-22. The Examiner is respectfully requested to reconsider and remove the rejections of claims 1-2, 4-9, and 11-22 and to allow all of the pending claims 1-2, 4-9, and 11-22 as now presented for examination.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record. Should any unresolved issue remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

S.N.: 09/658,731
Art Unit: 2617

Respectfully submitted:



John A. Garrity

8/15/2007

Date

Reg. No.: 60,470

Customer No.: 29683

HARRINGTON & SMITH, PC

4 Research Drive

Shelton, CT 06484-6212

Telephone: (203)925-9400

Facsimile: (203)944-0245

email: jgarrity@hspatent.com

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. BOX 1450, Alexandria, VA 22313-1450.

8/15/07

Date

Elaine F. Mian

Name of Person Making Deposit